

OhioEPA

Division of Air Pollution Control

Response to Comments

Project: Kraton Polymers, L.L.C. permit-to-install modification
Ohio EPA ID #: 06-08260

Agency Contacts for this Project

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Ohio EPA held a public hearing on June 12, 2007 regarding the draft permit - to- install for modifications to Kraton Polymers' G-2 Process Unit. This document summarizes the comments and questions received during the associated comment period, which ended on June 19, 2007.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format.

Notification Concerns

Comment 1: **Why was the public not notified of the public hearing sooner? Why were the names of the chemicals not given in the public notice? Why are increases to Kraton's Title V permit being allowed?**

Response 1: Ohio EPA is required to publish a public notice in the newspaper of largest circulation in the county where the facility is located. That notice must appear in the paper at least 30 days prior to the public hearing. A notice was published in the Marietta Times on Friday, May 4, 2007, which was 39 days prior to the hearing.

In addition to the legally required public notice, Ohio EPA often sends a citizen advisory to interested parties living

near the site. In cases where no interested parties list exists, we will send the citizen advisory to local city and township officials, the public library, etc. We also send a news release to all media outlets in the affected county, which is normally sent out roughly two weeks prior to the hearing.

The draft notice submitted to the newspaper is to inform the public of actions taken by the Agency. As it states in the public notice, more information is available to the public by contacting the individual listed in the notice. This information includes the quantities and types of pollutants authorized under the permitting action. In addition, Ohio EPA's Web site contains all draft permits issued by the Division of Air Pollution Control. These permits list all the criteria air pollutants, hazardous air pollutants (HAPs) and toxics that will be regulated under the proposed permit. Permits issued by DAPC can be viewed at http://www.epa.state.oh.us/dapc/pti_issued/pti.html

For clarification, the modification currently proposed is not for a Title V operating permit. Rather, it modifies a previous permit-to-install. Title V permits include emission limitations, operational restrictions, monitoring, record keeping, reporting and testing requirements for each emission unit located at a facility. The current permit evaluates only the changes occurring from the modification of the G-2 process unit.

Air Pollutant Types and Quantities

Comment 2: **What are the overall changes in both short-term and long-term emission rates? Which flare and process compounds does Kraton wish to increase in the air? Are they volatile organic or inorganic compounds?**

Response 2: Overall, there will be increases in the allowed short-term and long-term emission rates from Kraton's G-2 process unit. Both volatile organic compounds and non-volatile inorganic compounds will be emitted. Volatile organic compounds (VOCs) and some inorganic compounds (nitrogen oxides and carbon monoxide) will be vented from the flare. The same compounds will be emitted from the "process end" of the emissions unit with the addition of particulate matter. Volatile organic emissions from the "wet end" and "process end" are controlled by the use of a flare and catalytic

oxidizer, respectively. The nitrogen oxide and carbon monoxide emitted are created by the combustion of VOCs in the control devices (flare and catalytic oxidizer).

The following tables compare the amount of emissions that will be permitted under the proposed permit to the emissions allowed under Kraton's current permit (PTI 06-3703). Please note that these are the maximum allowable emissions. Actual emissions are forecasted to be lower. (See Response 4):

Short-Term Limits

	PTI 06-3703 (current)	PTI 06-08260 (proposed)
Nitrogen oxides	0.7 lb/hr	N/A ¹
Carbon monoxide	14.7 lb/hr	21.0 lb/hr ²
Volatile organic compounds	9.0 lb/hr, as a daily average	36.8 lb/hr ²
Particulate matter	0.4 lb/hr	21.5 lb/hr ³

¹ With the ratification of Senate Bill 265, any pollutant from a new or modified source that is emitted in quantities of less than 10 tons per year is not required to have a short-term emission limitation established pursuant to Best Available Technology (BAT) in the permit. Additionally, no other Ohio Administrative Code (OAC) rule specifies an applicable short-term limit for NOx. The maximum potential annual emission rate of nitrogen oxides from Kraton's G-2 unit is 6.5 tons per year.

² Limits established pursuant to BAT (OAC rule 3745-31-05(A)(3)).

³ This short-term limit is taken directly from OAC rule 3745-17-11 because controlled emissions are less than 10 tons per year. Senate Bill 265 does not allow Ohio EPA to set a more stringent limit under BAT. However, based on design information provided by the permittee, the short-term emissions shall be 2.25 lb/hr (maximum) and 9.9 tons per year.

If you are interested in learning more about Senate Bill 265, please feel free to visit our Web site at <http://www.epa.state.oh.us/dapc/SB265/sb265.html> for more information.

Long-Term Limits

	PTI 06-3703 (current)	PTI 06-08260 (proposed)

Nitrogen oxides	3 tons per year	shall not exceed 9.9 tons per year
Carbon monoxide	64.0 tons per year	91.6 tons per year
Volatile organic compounds	39 tons per year	49.5 tons per year
Particulate matter	1.8 tons per year	shall not exceed 9.9 tons per year

Air Pollution Controls

Comment 3: Has Ohio EPA asked Kraton what technology is available to allow Kraton to increase its production without expanding its permit levels?

Response 3: Mechanisms are in place to determine when additional controls are needed for a specific project. Ohio EPA reviewed the proposed modification and determined that the source meets Ohio's requirements for Best Available Technology with the currently installed catalytic oxidizer and flare systems. Federal regulations can also define when additional control equipment is needed for a specific project.

When evaluating whether Ohio EPA has the authority to require additional controls due to federal regulations, we compare the level of the proposed emissions increases from a project with the significant emissions thresholds established in federal law by U.S. EPA. Significant emissions thresholds are established to be protective of human health and the environment. The emissions increases proposed by Kraton in the permit application for the G-2 process modification are below the significant emissions thresholds per federal rules (see table below). Therefore, Ohio EPA does not have the authority to require Kraton to evaluate the need for additional controls on the G-2 process.

	Pre-Modification Actuals (tons per year)	Post-Modification Actuals (tons per year)	Change in Emissions (tons per year)	Significant Threshold Limits (tons per year)

Nitrogen oxides	4.4	6.5	2.1	40
Volatile Organic Compounds	18.0	46.2	28.2	40
Carbon monoxide	—	—*	91.6	100
Particulate Emissions	—	—*	9.9	15 (PM10)

* The maximum emission rates of carbon monoxide and particulate are below the Significant Thresholds; therefore, there was no need to compare the change in the emissions because it could not be more than the threshold limits.

Toxicity and Health Effects

Comment 4: **The use of the term “nontoxic” is misleading to the public. [Term used by Kraton representative quoted in newspaper.] Substances regulated under Title V regulations have all been determined to be hazardous, including criteria pollutants.**

Response 4: Criteria pollutants and hazardous air pollutants (HAPs) can be harmful to human health and the environment at some level. The federal government has set National Ambient Air Quality Standards for pollutants that they believe should be regulated, these are particulate (PM/PM10), sulfur dioxide (SO2), nitrogen dioxide (NOx), carbon monoxide (CO), ozone (formed from VOCs and NOx) and lead (Pb). The air quality standards are conservative by nature. They are designed to protect sensitive segments of the population (the very young and the elderly).

Many of the toxic compounds that are emitted from industrial processes, motor vehicles and other sources are part of a group of chemicals known generally as VOCs. However, no federal air quality standard has been set for specific toxic and hazardous pollutants, above which they would be considered harmful.

U.S. EPA has developed technology-based standards for some sources of Hazardous Air Pollutants (HAPs), known as the Maximum Achievable Control Technology (MACT)

standards. Kraton is required to comply with the Synthetic Organic Chemical MACT standards, Subparts I and H.

Comment 5: **Without being trained medical professionals how can Ohio EPA state that the changes allowed by this permit do not affect the health of those living near Kraton?**

Response 5: The air quality standards are set to protect the health of the most sensitive segments of the population, such as the very old and very young. These standards set limits on how much pollution can be emitted because our lawmakers have decided emissions beyond this amount are excessive and may pose a health and/or environmental risk. However, some individuals may have more sensitivity to chemicals and other substances than the general population. Because of this, it is not possible to ascertain that there would be no person(s) effected whatsoever by the emissions from any plant.

Environmental laws are created and revised by the state legislature and the United States Congress. Ohio EPA performs its functions as specified in the Ohio Revised Code (ORC). Ohio EPA is obligated to act upon permit applications, either denying or approving, on the basis of the available facts and information. If a source complies with the laws and rules, and meets the criteria for decisions within them, Ohio EPA is obligated to approve the application.

Comments from Kraton Polymers, L.L.C.

Typo Corrections and Clarifying Information

Comment 6: **Please correct typos and add and/or delete the following word(s) to clarify the permit terms and conditions. (Bold italics indicate that words have been added and strikeouts indicate that words will be deleted.)**

Page Number of Permit	Term Number	Changes
N/A	Director's Signatory Page	Facility address correction to 2419 State Route 618
162 of 179	Part III,A.I.1., 3745-31-05(A)(3)	"Wet end" shall be controlled by a flare, <i>or equivalent control device.</i>

162 of 179	Part III,A.I.1., 3745-31-05(A)(3)	"Process end" shall be controlled by a catalytic oxidizer, or equivalent control device.
163 of 179	Part III, A.I.2.d	<p>Edit the first sentence of the second paragraph to read, "When the unit is operating cyclone finishing is in operation, all organic emissions, excluding fugitive emissions, from the cyclone process dryer in this emission unit shall be vented to a catalytic oxidizer or equivalent control device."</p> <p>Edit the last sentence to read, "When the unit is operating the LMW finishing is in operation, organic compound emissions are minimal and vented directly to the atmosphere."</p>
163 of 179	Part III, A.I.2.e	Change to: Particulate emissions from handling and transfer of dry materials shall be routed to a cyclone, fabric filter, or equivalent device, while unit is in operation.
164 of 179	Part III, A.I.2.a	Where emissions of organic materials are controlled by the flare or equivalent control device,.....
164 of 179	Part III, A.I.2.b	Where emissions of organic materials are controlled by the catalytic oxidizer or equivalent control device...
164 of 179	Part III, A.I.2.d	Add to the paragraph, " The cyclone process cooler vents directly to the atmosphere. "
164 of 179	Part III, A.I.2.e	Add " ...while the unit is in operation. "
166 of 179	Part III, A.III.1	In second paragraph change daily checks to weekly checks.
166 of 179	Part III, A.III.6.c	"...flare pilot flame presence..."
166 of 179	Part III.A.III.7	"The permittee shall properly operate and maintain a continuous

		hydrocarbon analyzer system(HCAS) to continuously monitor and record..."
168 of 179	Part III.A.10	<p>a. excluding periods of HCAS downtime or failure, the hourly VOC emissions....</p> <p>b.VOC mass emission rate of the exhaust gases downstream of the catalyst bed from the catalytic oxidizer exceeded "Hmax".....</p> <p>c. all periods of downtime or failure for time that the HCAS was malfunctioning.</p>
169 of 179	Part III, A.IV.4	"The permittee shall submit...a log of the downtime or failure for the capture (collection) system..."
169 of 179	Part III, A.IV. 6	<p>a. all exceedences of the 34.4 lb/hr VOC emissions limitation from the finishing end; and</p> <p>b. all exceedences of the VOC emission limitation of 39 tons/year from the finishing end, as a rolling, 12-month summation.</p>
170-173 of 179	Part III, A.V.3	Revised: If required by the Director of the Ohio EPA, or an authorized representative of the Director , compliance shall be determined...
170-171 of 179	Part III, A.V.1.b and d	Change to "Compliance demonstrated with the following worst case, one time calculation, utilizing..."
170 of 179	Part III, A.V.1.c	Applicable Compliance Method
172 of 179	Part III, A.V.1.h	Change reference of Section A.V.2 to A.V.3
173 of 179	Part III, A.V.2	Change to : The flare compliance demonstration required by 40 CFR Part 63 Subpart A, 63.11(b) and with the operational restriction in Sections A.II.1.c.4 of these terms and conditions was demonstrated through a one-time test... Results submitted to Ohio EPA indicate that the average

		heating value of the flare gas stream is 565 BTU/scf, and the gas velocity averaged 12.1 ft/sec, and The calculated Vmax is 122 ft/sec based on the flare gas stream composition at the time of test.
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Response 6: After reviewing the above comments, Ohio EPA has determined that these changes shall be made to the permit in order to clarify the requirements placed upon the permittee.

Comment 7: **Kraton requests that corrections and additional phrases be added to the General Terms and Conditions found in Part I of the permit.**

Response 7: The General Terms and Conditions are boiler plate terms, which are developed by the Division of Air Pollution Control. These terms cannot be changed on an individual permit basis.

BAT Determinations

Comment 8: **A revised permit-to-install application was submitted to Ohio EPA on April 30, 2007. The revision deleted the installation of an additional baghouse to the process end of the G-2 unit. Kraton asks that reference to these baghouses be removed from the terms and conditions of the PTI.**

Response 8: Ohio EPA has evaluated the changes proposed by the revised PTI application. Comparison of the calculations for the source when using the additional baghouse showed that there was no substantial reduction in particulate emissions with the installation of the new baghouse. Kraton currently has five baghouse systems for control, with an estimated 98 to 99% control efficiency, installed on the G-2 unit. Three of these are followed by cartridge type filters (99% efficiency). Kraton will also be connecting the exhaust from one of the integral cyclones (S-9391) used for product capture to one of the existing baghouses (S-9297). This emission point had previously been vented to the atmosphere.

Ohio EPA will revise the terms and conditions of the permit

to reflect that no additional particulate controls will be added to the unit and to clarify the description of the process unit.

MACT Requirements

Comment 9: **Kraton Polymers would prefer that MACT (Maximum Available Control Technology) requirements be referenced in Part II of the permit and not be copied into the permit as they are written in 40 CFR 63.**

Response 9: In order to retain the authority to enforce the MACT standards, Ohio EPA must place the requirements of all applicable rules in issued permits. The applicable standards of 40 CFR 63, Subpart H and I will be included in the permit. The applicable General Provisions are included by reference in Subparts I and H.

Comments 10: **Please remove the duplication of 40 CFR 60.11 flare requirements from Section II and III. These requirements can be included as part of the permit by including a reference of the MACT standards in Part III.**

Response 10: The BAT requirements for flares required under the Operational Restrictions of the permit are identical to those found in 40 CFR 60.11(b). Kraton is subject to requirements of 40 CFR 60.11(b) by 40 CFR 63, Subparts H and I. The duplication of the operational and monitoring requirements has therefore been removed from Part III of the permit.

Flare Emissions and Monitoring

Comment 11: **Flare emission rates for the G-2 unit were established for this permit using annual VOC solvent usage factors. Therefore, the emission rates from the flare are based upon an annual average and may be exceeded during peaks in the batch production process. Please remove these limits or change the limits to reflect the limits as based on an annual average and associated with the G-2 unit only.**

Response 11: Flare emission rates have been determined using the worst case annual solvent usage as determined from plant records for the last three years. This has been clarified in Section I.V.1.b by designating "U" as the annual solvent usage.

Comment 12: Kraton requests that language be changed in terms A.III.6.b. and c. to more accurately reflect the language found in 40 CFR 63.11(b)(5) and to correct a typo.

Response 12: The language found in 40 CFR 63.11(b)(5) states, "Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any equivalent device to detect the presence of a flame." This requirement explains that the method for determining the presence of the flame is the monitoring of the flare's pilot flame. Therefore, Ohio EPA believes that the current language found in A.III.6.b is accurate. The word "flare" will be changed to "pilot flame" in A.III.6.c.

Catalytic Oxidizer Efficiency Requirements

Comment 13: Kraton has multiple pieces of analytical equipment that may indicate that destruction efficiencies for the catalytic oxidizer are less than 95%, while readings from the continuous monitor at the outlet of the catalytic oxidizer indicate that the unit is in compliance with the short-term limit. Kraton feels that this would give rise to problems when completing the annual certification for term Part III, A.I.2.b. Kraton requests that the following is added to the term so that it reads, "Where emissions of organic materials are controlled by the catalytic oxidizer, the control device shall achieve a minimum of 95% control efficiency as determined by the testing requirements in Section V."

Response 13: Kraton Polymers currently utilizes two continuous hydrocarbon monitors to evaluate the destruction efficiency of the catalytic oxidizer: one located before the catalyst bed and one at the exhaust of the catalytic oxidizer. The continuous monitoring of the destruction efficiency is more reliable on an ongoing basis for evaluating the compliance of the control device than depending on periodic stack tests. Therefore, it is our decision not to include the requested language in Section A.I.2.b. of Part III.

Safety Bypasses

Comment 14: Kraton has stated that it cannot comply with term Part III, A.I.2.d 100% of the time. Safety control systems are

in place to protect the catalytic oxidizer from damage. When the safety system shuts the catalytic oxidizer off, the finishing end of the process also shuts down. However, air continues to flow through the dryers to ensure that an unsafe explosive condition does not occur. The air will contain VOCs for a short period of time which will not be vented to a control device. Kraton wishes to add the following to term Part III, A.I.2.d., *"This term does not apply to any emergency vent activation of the control device for safety and/or equipment protection, for which the permittee has records demonstrating that the resulting emissions from the emergency vent to the atmosphere do not exceed the hourly emissions limit expressed in Section A.I.1."*

Response 14: It is understood that the bypassing of control equipment is sometimes necessary to ensure the safety of employees and process and control equipment. However, the circumstances under which these emergency venting activities occur needs to be evaluated by Ohio EPA per OAC rule 3745-15-06. Should it be determined that the emergency venting of organic materials was not necessary, Ohio EPA's ability to pursue the matter would be compromised by the inclusion of the suggested term in any applicable permit. Therefore, the requested change will not be made to emission unit term A.I.2.d.

Senate Bill 265 Language

Comment 15: Kraton believes that the language in the table found in Part III, A.I.1 regarding PE and NOx should be altered. The following should be removed: "Restriction to avoid BAT", " See Section A.I.2.g below", and "See Section A.I.2.h.". Some of the information in Sections A.I.2 g and h would be inserted into Section A.I.1, in the appropriate section. The information in Section A.I.2.g should be removed, but if it is not it should be moved to Section V, as a statement of basis for the determination of compliance for particulate emissions. It should also be noted under OAC rule 3745-17-11, Table I, that this value does not reflect the potential to emit for the "finishing end" of the G-2 process unit.

Response 15: The following alterations will be made:

a) the description of the control devices and their design

control efficiencies* will be moved to Section A.V.1.j.;

b) language in Section A.I.2.g will remain explaining that emissions shall not exceed 9.9 tons per year due to the controls used on the G-2 process system; and

c) it will be noted that OAC rule 3745-17-11, Table I does not reflect the potential to emit for the finishing end of G-2.

*Please note that design control efficiencies are only the manufacturer's best engineering estimates of control efficiencies.

Leak Detection and Repair (LDAR) Program Revisions

Comment 16: Kraton requests that revisions to their Leak Detection and Repair (LDAR) program become effective 60 days after submitting a written notice to Ohio EPA, if neither the request is denied nor additional information requested.

Comment 16: The time required to review the request will be dependent on the workload and availability of staff at Ohio EPA. Restricting the amount of time available for comment on revisions to monitoring procedures and recordkeeping would hinder Ohio EPA's ability to complete a thorough review of proposed changes to the LDAR program.

End of Response to Comments